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CONSTRUCTION AND EQUIPMENT

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CONSTRUCTION

UDC 69.003:658.012.2

BUILDERS CONFER AT TASHKENT ON NEW CONSTRUCTION MANAGEMENT RULES

Moscow EKONOMIKA STROITEL'STVA in Russian No 2, 1981 pp 19-25

[Article by V. G. Ivanov, deputy chairman of USSR Gosstroy and chairman of the conference's organizing committee: "Ways to Improve the Economic Mechanism"]

[Text] "Introduce into the 11th Five-Year Plan a set of measures for improving the economic mechanism and strengthening its influence on increasing effectiveness and quality, and improve the organizational structure of management and style and methods of operation."—From the CPSU Central Committee and USSR Council of Ministers draft for the 26th party congress, "The Main Directions for Economic and Social Development of the USSR During 1981-1985 and During the Period up to 1990."

On the results of an All-Union Conference of Construction Workers at Tashkent.

During the 11th Five-Year Plan the conversion to new management methods, in which more improved methods for planning capital investment and construction operations, which orient all participants in construction toward raising its effectiveness and achieving high results for the national economy, play a central role, should be completely accomplished.

A feature of the measures for improving the economic mechanism in the modern era is their comprehensiveness. The interrelated set of measures is a tool for further developing economic methods for managing socialist production, the development of which was preceded by a number of economic experiments.

It must be emphasized that integrated improvement of the economic mechanism in construction requires well-organized preparatory work, including a study by many laboring collectives of the whole system of measures and of methods for their realization, and preparation of baseline data for making up drafts of plans and developing scientifically substantiated planning norms and standards documents, but the main thing is a deeply thought-out systems approach to this work.

The All-Union Conference on "Intensification of the Effect of the Economic Mechanism on Increasing Operating Effectiveness and Construction Quality" that met in Tashkent at the beginning of October 1980 concentrated the attention of its participants on ways to insure the execution of measures in the area of capital

construction that were called for by the CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979, "On the Improvement of Planning and Strengthening of the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality."

Taking part in the conference were responsible workers of party and soviet organs, managers and specialists of USSR Gosplan, USSR Gosstroy, the Union-republic gosstroys, USSR Stroybank and construction ministries and agencies, supervisors, scientists and specialists of scientific-research institutes and design organizations, and supervisors, engineers and technicians of construction and installing organizations and construction-industry enterprises, as well as specialists from the People's Republic of Bulgaria, the Hungarian People's Republic and the Czechoslovak Socialist Republic.

The conference's organizers—the Central and Uzbek Republic administrations of the NTO [Scientific and Technical Society] of the Construction Industry, USSR Gosstroy, the construction ministries, UzSSR Gosstroy and the NIIES [Scientific-Research Institute for Construction Economics] under USSR Gosstroy—specified, along with the main reports at the plenary session, the work of the sessions that discussed questions of improving planning and the organization of management in construction, and the role of cost accounting, financing and credit levers and incentives for raising effectiveness and work quality.

The existing experience, though it is small, of Union-republic construction ministries in various Union republics and of some main construction administrations, in which new indicators for the capital construction plan and more improved methods for economic control were applied in an experimental procedure, will help in the successful conduct of work that is preparatory to conversion to the new economic-management methods.

The advantages of newly introduced indicators for planning and evaluating the activity of construction organizations and the peculiarities of their development and the problems associated with their use and with conversion to settlements for finished construction output—all these were discussed at the conference, taking into account the experience of BSSR Minpromstroy [Ministry of Industrial Construction], UkSSR Mintyazhstroy [Ministry of Construction of Heavy Industry Enterprises], LiSSR Minstroy [Ministry of Construction], Glavzapstroy [Main Administration for Construction in the Western Economic Region] of USSR Minstroy, Glavmosinzhstroy [Main Administration for the Construction of Engineering-Services Structures in Moscow City] and other organizations.

As a result of the active discussion of the multifaceted questions associated with functioning of the economic mechanism in construction, aspects of the operation of this mechanism's economic levers were elaborated, and ways to solve certain problems that arise in perfecting the mechanism were defined.

The speeches by conference participants paid special attention to the new methods for planning, for strengthening the role of the financing and credit-granting mechanism, for raising construction-work effectiveness, for improving methods for developing plan indicators for the various levels of management, and for preparing progressive norms and standards for planning.

As a result of the exchange of opinions, the responsibility of all construction assembly-line participants and of organs that manage construction for implementing

the new planning methods were refined with precision. For example, for normal functioning of the system, design and budget-estimating documentation should be turned over to the builders by the established deadline prior to 1 July of the year preceding the plan year, and, what is very important, with the designation therein of the complexes that are due for early startup. Without this, the plan for construction commodity output will be unsubstantiated, and the effect of this important indicator, which stimulates acceleration of the introduction into operation of the facilities that are under construction, will be wasted.

It is also completely obvious that the draft of the capital construction plan should be formulated by the clients and contractors simultaneously in accordance with mutually agreed data. In particular, the distribution of the ceilings for construction and installing work by year in the lists of titles of construction projects without the participation of the contracting organizations deprives the builders of the opportunity to effect rhythmic operation and to create the necessary technological reserves for the facilities being built.

The need for an integrated approach to improvement of the economic mechanism was mentioned both in the main reports and the addresses of the conference's participants. This was especially emphasized by representatives of those ministries and main administrations that have work experience in planning for construction commodity output and in applying the integrated system of measures for raising the role of economic methods of operation.

Problems of high quality preparation of the five-year plan for capital construction can be resolved only with the joint work of all construction participants. Of course, joint development of the capital construction plan by clients and contractors requires now, at the stage of preparatory work on the development of the plan for the 11th Five-Year Plan period, a restructuring in the work of the planning services at various management levels. An exceptionally important role is assigned here to development of the plan from below, where basically the prerequisites for carrying out the tasks that the builders face can be considered.

Many of the speeches gave a special role to the preparation of capital construction plans that are balanced with supply, equipment and manpower resources and with the productive capacity of the construction and installing organizations.

One of the pivotal questions discussed at the conference was conversion to the new indicators for planning capital construction.

Construction commodity output and its determination when specialized organizations build various structures and do various types of work were the topic of many addresses.

Peculiarities in determining the construction commodity output of subcontractor organizations quite naturally provoked a rather sharp discussion. According to existing instructions, the construction commodity output of subcontractors is the budget-estimated cost of the sets of special construction and installing work that are turned over within the plan period. In this case, for organizations that are installing special industrial and power-engineering equipment, the budget-estimated cost of the sets of operations are included in the construction commodity output volume after turnover for operation of an enterprise, startup complex or phase as a whole. For other subcontracting work, the budget-estimated cost of the sets

of operations are included in the construction commodity output volume after their completion, regardless of the date of turnover of the facility for operation.

The recommendations which various specialists expressed at the conference, that all subcontracting work should be included in the construction commodity output after turnover of the facility as a whole for operation, aroused different opinions from the conferees.

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The question as to the stage at which the subcontractors' work should be included in construction commodity output requires further study of experience in use of the new indicators for planning construction work.

In raising construction operating effectiveness, the role of the credit-financing mechanism is being greatly strengthened. With conversion to settlements for enterprises, startup complexes and phases, and facilities that have been built to produce output or to extend services and that are completely finished and ready for operation, the role of credit as a source for forming working capital for construction organizations rises in the budget-estimated cost of construction commodity output. USSR Stroybank computations indicated that the share of credit in sources for covering expenditures for uncompleted construction work reaches 80-85 percent.

The differentiation of interest rates on credit as a function of the observance of construction deadlines will, as experience indicates, help to concentrate resources, reduce construction time and cut above-plan expenditures for unfinished construction work, since, if construction deadlines are not met, the contracting organizations will bear considerable material loss as a result of a severalfold increase in the charge for credit.

Because of this, the contractors' recommendations that the procedure for undisputed compensation for the losses that the contractor bears where a deadline for turning a facility over for operation is violated through the fault of the client must be clarified deserves attention. This will help in the observance of firm cost-accounting principles in the mutual relationships of construction participants.

Improvement of the economic mechanism in construction is inextricably linked with the development of cost accounting, based upon five-year plan years and long-term economic standards, which, depending upon improvement in the economic activity of construction organizations, will effect an increase in the funds left them for the forming of economic incentive funds and for other purposes.

The orientation of plan construction indicators to the final results requires the use of purposeful start-to-finish indicators in the plan for all elements of production and management, from cost-accounting brigades to construction ministries.

Expansion of forms of the brigade contract, as conference participants persuasively confirmed in their speeches, is aimed precisely at achieving the main goal--the introduction into operation of jobs on time or ahead of time, that is, the main indicator of activity of the brigade--the primary element in construction operations--has become not the type of work but the object that is being built.

At present, the development of the brigade contract has led to the introduction of such forms thereof as the start-to-finish contract for an industrial line (from production department to transport to the construction project), the continuous

contract, and other forms, which orient the whole process of the construction assembly line to the achievement of a single purpose.

Along with this, cost accounting in higher elements of construction management—ministries and main administrations, which also support fulfillment of the main task with economic expenditure of production resources—is being developed.

A combining of the new planning methods with the ministry's activity on the basis of self-support and material incentives for its workers in accordance with the ministry's results in meeting plan goals paves the way to a qualitatively new form of management in the highest element of the organizational structure.

There is no necessity to prove that improved methods for planning construction and a rise in the role of economic methods in the work of construction organizations inherently improve organization of the management structure.

Questions of improving the organizational structure of construction management, as is the case also with cost accounting, were discussed from the standpoint of expanded conversion to qualitatively new forms.

Construction management should be brought closer to construction operations. One of the more correct paths is the creation of large construction subunits in the form of construction and installing production associations. However, the new management forms should be created with a good deal of thought, taking into account the effectiveness of this measure in each concrete case.

Representatives of scientific institutions who spoke at the conference presented the results of developments aimed at solving various problems that arise when implementing measures for strengthening the influence of the economic mechanism on raising construction work effectiveness and work quality.

At the same time, the conference participant's speeches pointed to the need to strengthen the role of science at all stages of implementation of the measures called for by the 12 July 1979 decree of the CPSU Central Committee and USSR Council of Ministers. This concerns the preparation of standard-practices documents, directives, instructions and changes in existing legal documents and regulations that govern mutual economic relationships. Scientific institutions have been called upon to study experience in introducing proposals and recommendations that are aimed at increasing effectiveness of the operation of economic levers and stimuli.

The conference found it necessary to ask ministries, agencies, construction-industry NTO organizations, construction and installing organizations, and design and scientific-research institutes to review the recommendations they had worked out concerning measures for implementing in capital construction the principles of the 12 July 1979 decree of the CPSU Central Committee and USSR Council of Ministers and concerning questions that relate to their jurisdiction and to adopt the necessary solutions that will provide for successful implementation thereof.

Thus, for example, conference recommendations expressed the desire that USSR Gosplan, ministries, agencies, associations, and enterprises and organizations, with a view to increasing the stability of capital construction plan indicators and to keeping them in balance with the material, equipment and labor resources and the

capacity of construction organizations, effect the wide introduction of in-kind and cost breakdowns, a system of scientifically substantiated norms and standards, and the achievements of science and technology and advanced organizational and technological methods of construction, and also effect a considerable reduction in the number of enterprises being built simultaneously and create normal backlogs of accomplished work at carryover construction projects.

It was recognized as desirable that construction ministries and agencies, starting with the 11th Five-Year Plan, establish for construction and installing production associations and other construction and installing organizations subordinate to them goals for raising the quality of construction and installing work and strengthen incentives for improving construction quality.

It was recommended that construction ministries and agencies, All-Union construction and installing organizations, main administrations and construction and installing organizations further develop and improve cost accounting and economic incentives for construction work and make wide use of progressive forms of the brigade contract that embrace all participants in the construction assembly line.

The conference recognized that the appropriate ministries and agencies must be asked to effect as quickly as possible the development and the issuance of standard-practice recommendations on questions of planning the production-economics activity of construction and installing organizations, including recommendations on:

the preparation of five-year plans and production-economics plans for construction and installing organizations;

the planning of labor productivity in construction and installing organizations in terms of net output (standard) or other indicator that reflects changes in labor expenditures more accurately;

determination of the productive capacity of construction and installing organizations; and

the organization of internal cost accounting in construction and installing production associations (or trusts), calling for a direct connection between the plan, evaluative and incentive indicators of production units, and the appropriate indicators for the association's plan.

It is also necessary to complete the development of drafts for directives and standards materials for converting scientific-research, design-development, industrial-design and construction-and-installing organizations (or associations) of construction ministries and agencies to the cost-accounting system of organizing the work to create, master the production of and introduce new equipment.

On questions of improving organizational forms for managing construction, the desire was expressed that USSR construction ministries and agencies speed up the development of master plans for construction management and convert in 1981 to two- or three-level system of management, effect a further concentration of production, develop the specialization and more rational territorial development of construction and installing organizations, and concentrate in an area the general construction organizations that are, as a rule, under one ministry (or agency); speed up the establishment of construction and installing production associations as the basic

cost-accounting element in production management; work out, based on generalization of the work experience of existing mobile construction organizations, recommendations for further development and improvement of that form of organizing construction; and review the question of strengthening incentives for such organizations.

The conference asked USSR Gossnab to speed up the conversion of construction projects to the integrated supply of materials through territorial material-technical supply organs at the order of construction and installing organizations and in accordance with their requirements, as established by the designs and budget estimates.

The conference recommendations noted that, for purposes of further raising effectiveness in outfitting construction organizations with complete sets of production operating equipment, construction ministries and agencies must use more widely the delivery to construction projects of complete sets of structure, parts and materials through the organizations that supply complete sets of production operating equipment.

Questions of further developing the science of economics in construction were assigned a special place in the recommendations. Scientific-research organizations employed in the area of construction economics should concentrate special attention on generalizing the work experience of construction organizations under the new management conditions; developing and introducing a set of economic and organizational methods and recommendations for speeding up scientific and technical progress in construction; working out long-term prospects for the development and deployment of construction work and its materials and equipment base; working out organizational forms and economic and social methods for managing construction; developing and introducing progressive methods for organizing work and wages that will effect a reduction in labor-intensive and manual processes and an increase in labor productivity in construction; improving price-setting in construction; and improving organization of the activity of scientific-research organizations and institutions, strengthening coordination of the research to be introduced, and improving the system for introducing the results obtained.

It is desirable, with a view to improving organization of the introduction of completed research in construction economics, as the conference participants noted, that the most important research results be incorporated in construction ministry and agency plans for the engineering development and utilization of the achievements of science and technology, and that construction ministries and agencies select base organizations for the experimental introduction of completed research in the area of construction economics.

The conference held in Tashkent and the recommendations that it produced undoubtedly will help to implement successfully the CPSU Central Committee and USSR Council of Ministers decree, "On the Improvement of Planning and Strengthening of the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality.

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CONSTRUCTION

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INTEGRATED APPROACH TO IMPROVING CONSTRUCTION MANAGEMENT WILL REQUIRE CHANGES

Moscow EKONOMIKA STROITEL'STVA in Russian No 2, 1981 pp 25-30

[Article by A. I. Mitrofanov, professor, doctor of economic sciences and director of NIIES (Scientific-Research Institute of Construction Economics): "The Integrated Approach Is an Important Prerequisite to Raising Production Effectiveness and Work Quality"]

[Text] "During the 11th Five-Year Plan the development of science and technology should be subordinated to a greater extent to the solution of important problems of furthering the progress of Soviet society and to accelerating conversion of the economy to the path of intensive development."—From the CPSU Central Committee's draft for the 26th party congress, "The Main Directions for the Economic and Social Development of the USSR During 1981-1985 and During the Period up to 1990."

Nationwide discussion of the CPSU Central Committee's draft for the 26th party congress, "The Main Directions for the Economic and Social Development of the USSR During the Period 1981-1985 and During the Period up to 1990," testifies to the great motivation of the Soviet people to devise a practical line for developing the country's economy during the 11th Five-Year Plan.

It is important that construction workers fully implement during the five-year plan the measures for bringing proper order to capital construction that were called for by the CPSU Central Committee and USSR Council of Ministers decree adopted in 1979, "On the Improvement of Planning and Strengthening of the Influence of the Economic Mechanism on Increasing Production Effectiveness and Work Quality."

During the time that has passed since this decree was adopted, much work has been done which permits the main principles of the decree to be brought to a large number of managers, engineers, technicians and laboring collectives. A large number of standardizing and standard-practice documents aimed at realizing measures for raising the effectiveness of capital investment and construction work and for improving construction quality have been developed and approved.

Despite the fact that this work has not been completed yet, the preparatory documents already form a good base for broad execution of the most important measures for improving planning supervision over construction and for raising the production-economics activity of the branch's enterprises and organizations to a higher level.

Measures contemplated by the CPSU Central Committee and USSR Council of Ministers decree for improving the economic mechanism will be introduced fully during the approaching 11th Five-Year Plan, in accordance with the "Main Directions for Economic and Social Development of the USSR During 1981-1985 and During the Period up to 1990." However, a portion of these measures (the planning of construction commodity output; settlements between clients and contractors for completely finished construction, enterprises and startup complexes, phases and facilities turned over for operation; the indicator of standard net output; and so on) were applied in an experimental procedure in a number of construction organizations during the 10th Five-Year Plan, and so definite experience has been built up which, despite its limited scale, teaches much, particularly the necessity to take an integrated approach to the preparation for and the conduct of measures for improving the economic mechanism.

The interplay of organizational and economic forms and methods of management, as well as of various elements of the economic structure of construction work, is a single but rather complicated complex with a developed system of external economic ties with other branches and spheres of economic activity. Therefore, success in taking all measures for further developing and improving the economic mechanism in construction will depend greatly upon how completely and with what degree of coordination at least the main questions that make up the grounds for and the content itself of these measures are solved; and how completely the solution of the indicated questions cover economic-planning elements and organizations that have a direct relationship with the measures introduced. For it is necessary to emphasize two circumstances here. First, not everything, not even the large set of resources and of questions being solved actually effects the integrated approach. And second, the greater the scale or the more radical the measure, the more that the degree of success of the matter depends upon the integrated approach. There are many examples of this: the many years of work experience of BSSR Minpromstroy (Ministry of Industrial Construction) and of other republic construction ministries and large construction formations that converted by way of experiment to the new terms for planning and economic incentives; practical solution of the tasks of wide introduction of brigade cost accounting; the experiment on strengthening the role of construction organizations in improving design solutions and in reducing construction time; and other experiments and undertakings.

It is well known, for example, that the Belorussian experiment could indeed have actually become integrated and provided better results had it covered to the proper extent clients, designers, organs that furnish supplies and machinery, and the suppliers of equipment, and the financing and credit mechanisms. The Belorussian builders did not have a stable five-year plan. Neither was the most important principles of the experiment—conversion of the ministry to self-support—implemented, in essence, since the required measures had not been taken to provide for the profitable work of organizations in connection with the increase in wholesale prices for materials, change of transport schemes and other unforeseen circumstances that arise during the conduct of the experiment.

Measures for improving planning and economic incentives in construction that were called for in the CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979 mark a major step forward in effecting an integrated approach to the solution of these problems. In this case, an important feature of these measures is a strengthening of the orientation of the economic-planning activity of all construction participants to the final construction output.

Let us take the question of improving planning in light of the indicated decree. In order that the builders' plan may be realistic, balanced, stable, continuous-acting and mutually coordinated with the economic mechanism, the decree calls for a large number of measures that are applicable to all construction participants and economic-planning elements at the center and in the provinces.

The system of indicators that has been approved and the procedures for making up plans have been refined. Plan indicators that characterize the final purpose of the production facility have been made the basis for evaluating the economic activity and economic incentives of construction and installing organizations. The activity of the designers and suppliers of materials and equipment have been oriented more closely to the final results of construction operations.

The requirements for the substantiation of plans and the inclusion thereof of new construction projects and facilities have been stiffened by mandatory formulation of the necessary balance sheets for correlation of the plans with the results, including the regional aspect.

Questions of strengthening economic incentives for direct construction participants and, to a definite extent, also for higher organizations, touch directly upon and are linked with questions of improving planning. A number of measures for improving the financing and credit mechanism, for strengthening incentives for all construction participants, and for increasing responsibility for the stability of planning tasks and for executing them were called for.

All this has been made the basis for a number of standard-practice instruction documents that have already been or are being prepared. In the final analysis, all these papers, instructions and regulations on various questions of improving planning and economic incentives, as well as the solution of other economic problems of managing construction operations, should find and will find reflection in integrated or generalized standard-practice planning documents, such as Standard-Practice Instructions for Preparing Five-Year Plans for Construction and Installing Organizations, Standard-Practice Recommendations for Preparing the Production-Economics Plan (or the stroyfinplan (construction-financing plan)) for Construction and Installing Organizations, and, finally, on the whole, Standard-Practice Instructions for Planning Construction Operations, which should cover all aspects and questions of planning the economic activity in construction work at all levels of its management, from the Union construction ministry to construction and installing organizations that have the status of socialist state production enterprises. NIIES of USSR Gosstroy has either worked out and presented drafts of these generalizing documents to USSR Gosstroy for review (the first two) or they are being developed and will be presented to USSR Gosstroy by the established deadline.

But this is, so to speak, the external, or, more properly, the formal side of the integrated approach to solving the main problems of improving the planning of and economic incentives for construction operations. By no means does it, like the Standard-Practice Instructions for Developing State Plans for the Economic and Social Development of the USSR that were approved by USSR Gosplan in March of last year, the indicators and forms for preparing drafts of the state plan for the 11th Five-Year Plan period that were taught by USSR Gosplan, and the "Main Directions" for the period up to 1990 do away with the question of a really integrated approach, in essence, to the solution of these most important problems.

With respect to standard practices, it can be said that the central question of the new procedure for planning construction operations already has a solution—a preliminary one, of course, but it exists. USSR Gosplan in April 1980 approved Temporary Standard Practice Instructions on the Planning of Construction Commodity Output. Without actually examining the instructions, let us note only that, combined with the NIIKS recommendations of a more practical nature on this question, which are more detailed and have been approved by the appropriate departments of USSR Gosstroy and USSR Gosplan, these two documents should be made the basis of the practical activity of contractors and clients for planning capital construction and for executing settlements among them for finished construction output.

The integrated approach to solving this central question requires that attention be paid to a number of circumstances and factors that influence the formulation of plans and their feasibility, balance and stability.

Above all, steps must be taken to refine and improve the overall situation in capital construction, for which purpose it is necessary to draw up without delay a detailed inventory of uncompleted construction and to decide the fate of each job, to check and refine the settlements between clients and contractors and to provide realistic sources for meeting the requirements of funds for the elimination of existing arrears prior to converting to the new procedure for settlements for work done.

Conversion to the new procedure for settlements between clients and contractors where there are ceilings on capital investment and construction and installing work and a cessation of intermediate advance payments and credit-granting for expenditures of construction and installing organizations pose especially severely the question of the fate of construction projects and facilities that have been started unjustifiably and of the extraordinary amounts of uncompleted construction. Either this uncompleted construction, which has been piling up for many years, will stand in the way of introducing the new procedure and then there will lie ahead a lengthy and acutely painful process of adjustment, or radical measures should be adopted to eradicate chronically uncompleted construction and to place a sharp restriction on newly commenced construction projects and jobs. Above all, USSR Gosplan and USSR TsSU [Central Statistical Administration] have the decisive word here.

It is further necessary to take steps aimed at raising the responsibility of the parties, that is, the participants of intended construction, for solving right at the preplanning stage a number of questions that later on will affect the economic and organizational preparation for construction and the terms for planning and settling for construction commodity output. For these purposes it is necessary to provide for the active participation of builders in the predesign stage of developing the engineering documentation—in the choice of the construction site, development of the TEO [feasibility study] for the construction, identification of the conditions for accomplishing the construction, and other matters. The builders should display greater motivation and firmness in establishing specific obligations that the clients must fulfill prior to the start of construction and during its execution. The client's obligations as to amounts and the terms and deadlines for meeting the obligations should be determined during coordination of the formal orders and list of titles for the construction project. We are speaking here about the designation in the technical papers of phases of construction or of complexes due for startup, about the turnover of documents that confirm the deadlines for

delivering the basic industrial and power-engineering equipment, about deadlines for releasing the construction site, and the like.

The restructuring of the provisions for supplying materials and equipment is of great importance in the system of measures for improving planning. As required by the CPSU Central Committee and USSR Council of Ministers decree, the transfer of construction projects that are included in the state capital construction plan to the integrated supplying of materials through USSR Gosplan regional organs that supply materials and equipment per orders of construction and installing organizations, in accordance with their requirements as determined by design and budget estimates, should be completed this year. In 1980 this supply system was applied at 27 construction organizations that had an annual operations volume of 5.3 billion rubles. Completion of the introduction of this system means a 12-fold increase in its scale. But even this is too simplified an assessment of the task. Simultaneously, provisions should be made for introducing more progressive forms and methods for balancing capital construction plans with supply and equipment resources, new forms for organizing construction-project supply in accordance with the method of making up complete sets of production operations equipment, with issuance to the brigade, and new forms for delivering complete sets of equipment, instruments and apparatus through general suppliers with provisions for installation, startup and setting up work and monitoring over operations that bring the equipment up to design capacity. These problems are so important for practical implementation of the integrated approach to the substantiation of capital construction plans that everything else becomes empty talk if they are not solved.

A balanced state of the capital construction plan requires strict correlation of the planned amounts of construction and installing work with the capabilities of construction and installing organizations, taking into account the extent of their development. For this purpose there is a need for a rating certificate for construction organizations and a uniform method for determining their capabilities. These have been needed for a long time, but they still are not in existence. The traditional excuses of confirmed cases where scientific-research institutes could not prepare the required papers should not be an excuse here. There are drafts of such papers, and it is necessary to examine them and, if necessary, to correct them and issue them. Anyway, it is better, perhaps, to have a document that is imperfect in some respect than not to have any at all.

In connection with an integrated review of the tasks of improving construction-operations planning, it is necessary to dwell also on one very important question--the introduction of a category and an indicator of standard tentative net output into the economics of construction operations. Right now is not the time to initiate a discussion about the economic content of such an indicator and its role in the system of other construction-work indicators. A decision has been made on its use in determining labor productivity and the wage fund. At present, work that is practically unprecedented in scale is being promoted on the preparation of the standards base and of baseline conditions for computing the amounts of standard tentative net output. But it still must be noted that if this indicator is called upon to occupy one of the central places in the system of economic indicators for construction operations, and since it is actually organically associated with the amount of construction and installing work and with the number of workers employed in construction work, then it is also necessary to be consistent, and from purely practical considerations--following in the footsteps of the Lithuanian builders--to initiate jointly the planning of construction-operations volume, and also to

determine the capacity of construction and installing organizations, also in accordance with standard tentative net output.

The integrated approach to improving planning and economic incentives for construction operations in light of the CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979 manifests itself also in the organic and objective interconnection and interaction of planning-procedure measures with the economic mechanism and with the legal levers that are inherent in a mature socialist economy.

Everything that is new that is to be accomplished in planning relies upon the efficacy of economic levers and incentives that are understandable and intimate by their socialist nature to laboring collectives. The economic mechanism for management will get an improved base: in the form of stable plan indicators that are oriented to the final results of operations and that reflect the achievements of modern scientific and technical progress; in the form of long-term economic standards that have been incorporated in the plan; and in the form of precise organization and mandatory deadlines for developing and turning over plan tasks to the production collectives.

The steps intended for improving planning rely upon the further development and strengthening of long-term direct economic ties and contractual relationships, the development of progressive forms of the guaranteed supply of materials and equipment to construction organizations, and a strengthening of plan and contractual discipline.

It is well known that cost accounting is of vast significance as one of the most important levers for guiding the economy. Cost-accounting principles are being used increasingly widely in construction. However, the formulation of a single system of economic computations for all elements of construction management still has not been completed. At present, cost-accounting principles are being used mainly in the preliminary element of construction-work management—from the brigade to the trust (or association). But even here not everything is satisfactory. Brigade cost accounting, for example, is being introduced slowly. In 1979 the work of 44 percent of all USSR Mintyazhstroy (Ministry of Construction of Heavy Industry Enterprises) brigades, 46 percent of USSR Minstroy (Ministry of Construction) brigades and 51 percent of USSR Minpromstroy brigades were covered by this method.

The advanced experience of Vinnitsapromstroy (Vinnitskaya Oblast Industrial Construction Combine), where brigades are being consolidated and questions of their activity are being resolved in unison with questions of planning, the supplying of materials and equipment, and improvement of production management, is not being introduced widely enough. The fate of the test in the Tallinn Housing Construction Combine in organizing a "start-to-finish" brigade contract at a flowline construction group (the construction assembly line)—from the plant to transport to the construction project—was the same.

Cost accounting is not, in essence, used in the middle link of management (territorial construction administrations and Union-republic construction ministries); moreover, the basic principles of their cost-accounting activity and the forms of cost-accounting relations with subordinate organizations still have not been defined. Meanwhile, BSSR Minpromstroy's work experience indicates that conversion of

the middle link to cost accounting is a necessary measure that will provide for the comprehensive influence thereof on the production-economic activity of the low-level organizations.

Profit, which is organically and directly connected with final operating results, the turnover of construction commodity output and the introduction of finished jobs into operation, is now at the center of cost-accounting relationships. However, along with this, which is actually a cost-accounting category of profit, the formation and use of so-called unrealized profit, which is connected with unfinished performance of construction and installing operations, is permitted in the activity of construction organizations. This above all violates cost-accounting principles and definitely encourages growth of uncompleted construction. The question of unrealized profit cannot be considered solved.

Under the new terms, the role of one of the most important economic levers--incentives--as a factor that acts to raise production effectiveness and work quality, is increased.

Recently the amount of economic-incentive funds of construction organizations has grown greatly. Funds used for this purpose exceed 2.5 billion rubles per year. During the 11th Five-Year Plan the size of these funds will grow still more, particularly because the size of bonuses awarded for on-time introduction of production capacity and facilities into operation has been raised on the average from 2.2 to 3 percent of the budget-estimated cost of the construction and installing organization work that is performed to introduce capacity and facilities.

The existing incentive system calls for incentives not only for construction and installing organization workers but also for other construction participants. However, the amount and forms of this incentive are inadequate: they cover a limited number of organizations, and the amount of the funds set aside for them is not great, not enough to move the organizations to increase efforts toward the most rapid completion of the work. This question, in our view, is of paramount importance. NIIIS is working out the necessary recommendations, which will be presented to USSR Gosstroy.

Comprehensive incentives should also be accompanied by responsibility for all construction participants. At present the entire burden of responsibility for interrupting introduction of capacity and facilities into operation rests upon the prime contractor's shoulders. Forfeits exacted from clients cover only an insignificant part of the losses. In order to increase the client's responsibility it is desirable to use increased penalties when they fail to fulfill any of their obligations which exert a direct influence on construction time and the turnover of capacity or facilities for operation--right on up to reimbursing contractors for losses suffered for this reason. This must be considered during the review of the Regulations on Contract Agreements for Capital Construction that is now being conducted.

But the main thing here is that, until now, supervising economic organs and workers of client ministries have not borne any kind of personal pecuniary responsibility for the dispersion of resources, growth of uncompleted construction, and the enormous, at times multimillion ruble, losses from abandoned construction. It is in this situation that a lack of realism, instability and lack of balance in plans for builders get started. It is time, finally, to put an end to this, and there is no

more effective a lever or incentive for doing so than the personal pecuniary responsibility of economic supervisors. The principle that each economic supervisor should personally experience the consequences of the decisions he makes should be confirmed here.

This aspect of it also must be discussed, if only because the development of measures for guiding the proper procedure in capital construction cannot be considered finished, even in the modern era.

The most important prerequisite for the integrated and effective implementation of new measures for improving planning and economic incentives for construction operations is the most rapid completion of work to improve the structure and organizational forms of management. In accordance with CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979, this work should be completed in 1981.

One cannot help but note that master plans for construction management have not been approved for any one construction ministry, any USSR ministry or agency that has construction organizations, or any Union-republic. The four-level system still predominates in construction, and in some cases even the five-level system of management exists.

In 1980, construction and installing production associations numbered 136, and they did about 10 percent of all contracting work. And this when there are in construction an enormous number of small trusts (trusts with a work volume of less than 9 million rubles comprise 26.4 percent of the total number, those with less than 15 million comprise 58.4 percent), and many thousands of primary organizations have work volumes of less than 1 million rubles.

An especially difficult situation prevails in managing construction in regions on the territory of krais and oblasts. Departmental and local interests have led to an excessive local dispersion of forces and funds in construction over small construction organizations with a low level of engineering operations. All this complicates by far the management and planning of construction.

Work on the conversion to two- and three-level systems for managing construction, on the consolidation of construction organizations, and on the creation of construction and installing production associations must be speeded up. Master plans for managing construction that take into account the restructuring of construction management in regions, krais and oblasts should be worked out and approved in the shortest possible time. General construction work in krais and oblasts should, as a rule, be done by single construction formations of a single construction ministry, using large rayon and interr rayon construction-industry bases.

In conclusion, it must be recalled that the integrated implementation of measures for improving the planning and incentives for construction operations that were called for by the CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979 require acceleration of the development of a still larger complex of standard-practice and instructional documents. We are talking about such most important papers as the Regulations for Contract Agreements, the Statute on the Mutual Relations of Prime Contractors with Subcontracting Organizations, the Regulations for Financing and Granting Credit to Construction, and other documents of no lesser importance.

The science of economics faces major tasks in realizing the indicated decrees, especially in the development of long-range problems, and also of more immediate problems, such as the conversion to the organization of turnkey construction, the execution of complete and start-to-finish cost accounting, the creation of an actually integrated and economically effective system of incentives, and a scientifically substantiated and simpler system for budget-estimating standards, price-setting, and other problems, the scientific solution of which would help to guide more expeditiously the proper procedure in construction and to raise its effectiveness to the level of modern tasks and requirements.

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PITFALLS IN ESTIMATING CONSTRUCTION COSTS POINTED OUT

Moscow EKONOMIKA STROITEL'STVA in Russian No 2, 1981 pp 42-44

[Article by Engineer Yu. A. Kuz'mich: "Correct Determination of Budget-Estimated Cost Is the Path to Increasing Capital Investment Effectiveness"]

[Text] "Increase the responsibility of ministries, agencies, consultants, organs and design, development and scientific-research organizations for providing a high technical and economic level of design solutions and for correctly determining the budget-estimated cost of construction."—From the draft of the CPSU Central Committee for the 26th party congress, "The Main Directions for the Economic and Social Development of the USSR During 1981-1985 and During the Period up to 1990."

By way of discussion.

Some of the main tasks in capital construction that should be solved, in accordance with the CPSU Central Committee and the USSR Council of Ministers decree of 12 July 1979, "On the Improvement of Planning and Strengthening of the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality," are acceleration of the introduction of productive capacity and facilities and a rise in capital investment effectiveness.

Data from surveys conducted by USSR TsSU [Central Statistical Administration] indicate that of the more than 2,700 enterprises and facilities introduced into operation during 1976-1979, only one-third were completely built within the standard period. As a result of the systematic lag in turning fixed capital over for operation during the Ninth Five-Year Plan, 93 kopecks worth of fixed capital were introduced for each ruble of funds invested, and during the Tenth Five-Year Plan the figure was 92 kopecks, although the plans consistently specified that the second indicator be exceeded.

Late introduction of fixed capital into operation causes disproportions in national economic development. Calculations indicate that delays in introducing new capacity even by about 1 month lead to a loss of more than 2 billion rubles of national income for the national economy as a whole.

Stability in the budget-estimated cost of construction is of great importance in raising capital investment effectiveness and in meeting plan deadlines for

introducing productive capacity and facilities into operation. Yet the situation here is extremely unfavorable. Thus, according to USSR Sstroybank data, budget-estimated costs grew by about 40 billion rubles in 3 years alone of the Tenth Five-Year Plan.

Growth in the budget-estimated cost of building enterprises and facilities in accordance with approved design and budget-estimating papers over the estimated costs adopted during development of the five-year plan (the estimated cost of construction) creates disproportions in the national economy and leads to disturbances of balance in the distribution of labor and material resources called for in the state plan and to delays in the introduction of enterprises and structures into operation. All this hurts the national economy and exceeds severalfold the magnitude of increase in the budget-estimated cost.

Analysis indicates that the overall growth of budget-estimated costs comprises several factors:

53 percent—the review of designs with a view to increasing the capacity of enterprises, changing the mix of products produced, or creating new production facilities. It can be said that such a review yields an increase in capacity, improves the technical and economic indicators of the enterprises under construction, and so on. However, an analysis made by USSR Sstroybank indicates that of the total number of designs that were examined where the budget-estimated cost was increased, only 50 percent were reapproved with a relative improvement in technical and economic indicators. And this did not even consider the fact that the evaluation of such designs did not, as a rule, consider the reduction in effectiveness caused by postponement of the date for introducing the facilities into operation that is inevitable with an increase in budget-estimated cost. Moreover, the harm inflicted on interdependent production facilities and branches of the economy that is caused by a disruption of planned deadlines for delivering output also was not considered;

15 percent—an increase in cost of the equipment. An inadequately thorough study at the initial stage of design leads in many cases to the incorporation in designs of equipment not proved under production conditions and of industrial processes that have not been studied adequately;

15 percent—the review of designs caused by the inclusion of measures for protecting the environment, improving the cultural and everyday-living conditions of the enterprise's workers, and so on;

10-percent—the review of designs intended to bring them into line with design norms. The main cause for the preparation of a large amount of the design documentation that is not used in construction for a long time, including papers that are completely outdated, is lengthy construction time; and

7 percent—the correction of errors by design and survey organizations and the refinement of the work volume in accordance with the working drawings.

As is evident from what has been said, most of the factors in increased budget-estimated costs result directly from insufficiently thorough preplan design study.

Why does this situation occur, under which the budget-estimated cost of construction increases, and, as a result, plan deadlines for introducing into operation facilities that are under construction are violated?

In order to provide for continuity in the functioning of capital construction plans and to increase the responsibility of clients and contractors for the timely introduction of productivity capacity and facilities into operation, the CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979 called for the development and approval in five-year plans of registers of newly started construction of enterprises and structures and of registers of existing enterprises that are earmarked for reconstruction and expansion, showing their basic technical and economic indicators. One of these indicators is the cost of construction or reconstruction of the enterprise or facility.

Under existing practice for developing capital construction plans, the estimated cost of construction of enterprises and facilities that are included in the indicated registers is determined in accordance with consolidated budget-estimating standards and indicators for similar facilities, often without a consideration of the specific conditions of construction, as a result of which the estimate does not reflect a large number of necessary outlays. The budget-estimated cost of their construction or reconstruction, which, after approval, is an unalterable ceiling for the whole period of construction, is determined by the design organizations only when the design is developed, that is, after these registers of newly started construction projects and of existing enterprises and structures that are earmarked for reconstruction and expansion have already been confirmed as part of five-year plans.

Thus, considering the fact that, by the time plans for the five-year period are made up, USSR Gosplan and ministries and agencies have design and budget-estimating documentation only for the first 2 years, as a rule, and an authentic budget estimate of the cost of construction and reconstruction of a major portion of the facilities is determined after the plan has been made up and approved. This is conducive to many ministries, agencies and Union republics often committing deliberate "errors" in determining estimated construction costs, in order to stay within the appropriate ceiling. As a result, most facilities are designated in the plan for construction as "below the ceiling," that is, facilities where construction can be started without coordination with USSR Gosplan or other central organs. The advantage is plain: no matter what, the budget-estimated cost of the facilities will be refined, and, as a result, the plan will be revised, but then the facility has already gotten into the plan and so the funds necessary for it will be released sooner or later. Moreover, since the estimated cost of construction is in the majority of cases lower than the budget-estimated cost, the opportunity appears for including in the five-year plan a great many more facilities than would have been included had the budget-estimated cost been determined correctly when the plan was prepared. Thus a dispersion of funds is already incorporated in the plan, which, while the plan is being fulfilled, will cause the periods for erecting many enterprises to exceed the standard periods substantially, and, as a result of the increase in the actual budget-estimated cost, the construction of many facilities will not be started.

The plan is law, which requires precise discipline in execution at all levels of management of the economy. The compilation of a plan which knowingly will require that it be reviewed gives rise in some cases to an irresponsible attitude

toward the plan and can lead to a disturbance of the work rhythm of groups of enterprises and even of whole branches of the economy, to a weakening of planning guidance of the national economy, and to harm to the directive nature of planning, since an amendment of a ministry's or agency's plan introduces a definite disproportion into the economy and to a violation in some degree or other of mutually related calculations and indicators, in other words, to the start of a chain reaction of violations of plan discipline.

Thus, the correct determination of the estimated cost of building or rebuilding is a necessary step on the road to accelerating the introduction of production capacity into operation and to increasing capital investment effectiveness.

How can this task be solved? The estimated cost of the construction or reconstruction of a facility can be determined reliably only if design organizations—the developers of the designs—do, prior to approval of the registers of newly started construction projects and of existing enterprises and structures that are slated for reconstruction or expansion and are approved for inclusion in five-year plans for capital construction, a definite amount of design study, taking into account the specific conditions for the construction. In our view, it is possible to use more effectively for this purpose USSR Gosstroi's system of regional design organizations, which is organized in accordance with the administrative breakdown and economic regionalization of the USSR's territory.

The system of such organizations, which possess not only obligations but also rights to conduct a unified state policy in construction, should, jointly with branch-of-economy ministries, agencies and Union-republic councils of ministers and their design organizations, supervise the preparation of documentation that will substantiate a reliable construction cost for inclusion in the five-year plan. In possessing knowledge of concrete conditions for construction in their regions, high skills, and the right to solve interagency conflicts, these regional design organizations are able to evaluate or to determine more objectively the budget-estimated cost of construction during preplan design studies. It is natural that such studies will require the appropriate expenditures. In order to solve the problem of the desirability of these outlays, it is necessary to compare the amount thereof with those losses that the national economy will bear if such studies are not made.

During the Tenth Five-Year Plan capital investment in the national economy was 635 billion rubles. If it is considered that expenditures for design, beginning with the first design proposals and ending with the last working drawing, make up, according to the data of USSR Gosstroi's TsNIIpromzdaniy [Central Scientific-Research and Experimental Design Institute for Industrial Buildings and Structures], about 2 percent of all capital investment, then the total expenditures for these purposes during the five-year plan is about 13 billion rubles.

Based upon the experience of key design institutes of USSR Gosstroi (Promstroi-proyekt [State Design Institute for General Construction and the Sanitary-Engineering Design of Industrial Enterprises], Goskhimproyekt [State Union Institute for the Design of Special Structures and Buildings and Sanitary-Engineering and Power Engineering Installations for Chemical-Industry Enterprises] and Design Institute No 2), it is necessary to do 20-30 percent of the whole volume of design in order to determine reliably the budget-estimated cost of construction or reconstruction of an object, taking into account concrete conditions for execution (soil conditions, the availability of local building materials, provisioning with

power-engineering and manpower resources, protection of the environment, and so on). Consequently, in order to determine the authentic cost of constructing or rebuilding facilities during the Tenth Five-Year Plan, it would have been necessary to spend 3-4 billion rubles. If it is considered here that, upon compilation of the five-year plan, approved design documents (working drawings and budget estimates) exist for the first 2 years of the five-year period, then that sum will be still less. It is evident from this that this saving in design work has led to a growth in budget-estimated cost, which, as indicated above, was 40 billion rubles for 3 years alone, to the late introduction of fixed capital into operation, and, as a result of this, to a reduction in capital investment effectiveness.

Right now disputes are going on among various specialists about the stage at which the estimated cost of construction should be determined. Some say that it is necessary to make feasibility computations which will be introduced into outlines for developing and deploying branches of the national economy and branches of industry and outlines for developing and deploying productive forces by economic region and Union republic, while others say that this is impossible at the stage of making up these outlines and that these computations must be made at one of the design stages. But whatever we call these stages and however much we may argue, this requirement must be met without fail: before the registers of newly started construction projects and of existing enterprises and structures slated for reconstruction or expansion are approved in the five-year capital-construction plan, the authentic budget-estimated cost of these facilities should be determined, taking specific construction conditions into account. Unless this work is done it is impossible to make up a plan that is stable and feasible and can be effectively monitored.

In order to do work to determine the authentic estimated cost, it is necessary to specify the necessary financial resources and the material incentives for an evaluation of the quality of the work by participants in design and construction should be aimed at seeing to it that the actual cost of the construction of enterprises and structures corresponds with or is lower than the cost specified in the registers of newly started construction of enterprises and structures or in the registers of existing enterprises that are slated for reconstruction or expansion and are approved for inclusion in five-year plans, with the observance or bettering of the main technical and economic indicators specified in these registers.

The compilation of balanced plans that are based upon an authentic estimated cost of the construction or reconstruction of facilities that is determined as a result of design studies, taking specific construction conditions into account, will enable the increase in budget-estimated costs to be sharply reduced, the introduction of productive capacity and facilities into operation to be speeded up, and, thereby, the effectiveness of capital investment to be increased.

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CONSTRUCTION

NEW PIPE SHOP TO BE LAUNCHED AT VYKSA METALLURGICAL PLANT

Moscow IZVESTIYA in Russian 29 Jan 81 p 2

[Article: "A Giant Shop"]

[Text] Vyksa, Gor'kovskaya Oblast. Installation of production equipment has begun at the pipe electrowelding shop of the Vyksa Metallurgical Plant. The first machines have been mounted on the foundation. These machines weigh more than 1,500 tons.

In terms of size this shop is the equivalent of a large enterprise. The equipment that will be installed in the building, with an area of 270 square meters, will make it possible to produce up to 1 million tons of pipe a year.

In the 11th Five-Year Plan several major trunk gas pipelines are to be laid in the country. Large-diameter pipe from the Vyksa plant will be used in their construction. This pipe will make the fuel arteries more productive because it will be possible to almost double the working pressure of the pipelines.

The pipe in the new shop will be rolled from several layers of standard low-alloy steel and welded by high-frequency current using a technological procedure proposed by Ukrainian scientists.

The first phase of the shop will go on line this year.

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CONSTRUCTION

ARMENIAN CONSTRUCTION TRUST PERFORMING WELL

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 28 Jan p 2

[Article by N. Ordinyan, Sevan: "New Construction in Sevan"]

[Text] The city of Sevan, one of the young, swiftly developing industrial regions of Armenia, grows larger and finer every year. The collective of the Sevanstroy [Sevan Construction] Trust did 47 million rubles of construction and installation work here during the last five-year plan. Among the more than 60 projects turned over for operation ahead of schedule by the construction workers of the trust were new shops at the Elektrostekloizolyatsiya [Electrical Glass Insulation] and Electrical Actuating Mechanism plants and new buildings for schools, nursery schools, daycare centers, the city Palace of Culture, polyclinics, stores, dining halls, and residential buildings.

The pace of construction work in Sevan will increase further in the 11th Five-Year Plan. The Sevanstroy construction workers have already begun 10 new projects. Among them are plant dormitories with capacities of 600 and 200 persons, buildings for a school, nursery school, daycare center, department store, and dining hall, and high-rise residential buildings.

The collective of the trust completed its entire program for the 10th Five-Year Plan ahead of schedule and took on new, higher obligations in honor of the 26th party congress. The construction workers resolved to turn over all current year projects ahead of schedule, to earn "good" and "outstanding" ratings only, and to complete the two-month plan of construction and installation work by the first day of the party congress.

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CONSTRUCTION

REVIEW OF MATERIAL PUBLISHED ON LOCAL VOLGODONSK ACTIVITIES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 6 Feb 81 p 2

[Article: "Toward New Heights"]

[Text] As the opening of the 26th CPSU Congress draws nearer, socialist competition at the Atomash [Atomic Machinery] project, an all-Union construction site, is building up. The Atomash project workers are laboring with great patriotic enthusiasm and they are keeping their word. Issue No 6 (110) of the newspaper SOTSIALISTICHESKAYA INDUSTRIYA reports on the labor successes of workers at the Atomash project were published.

Discussion of the draft document "Basic Directions" is continuing. Among the participants have been A. Petrakov, secretary of the party committee of Industrial Construction Trust No 2, who wrote the article "Integrated Construction," and M. Kandakov, project supervisor of line No 1 of Construction-Installation Administration No 2 of the home-building combine, who wrote "On One Order."

Some 9,000 families in Volgodonk received well-appointed separate apartments in the five-year plan; 8,000 more families received "small family apartments." In other words, one out of six inhabitants of the city received a new apartment. Is this a large number? V. Kulikov, chairman of the executive committee of the city Soviet of Peoples Deputies answers this question in the article "There Will Be More Housewarmings."

The selection of articles entitled "In the Party Organizations" was prepared by V. Trufanov, an instructor of the Volgodonkenergostroy [Volgodonk Power Construction Trust] party committee. "About Us" is the title of the review written by V. Kucherov, brigade leader in the home-building combine and a deputy to the city Soviet, of the book "Shag v Budushcheye" [A Step into the Future] by Anatoliy Salutskiy.

V. Lesnoy, chairman of the city peoples court, appears in the newspaper with the article "One Step to Misfortune." Responses to criticism are published. Various information is provided. From Kuz'ma Volgodonkiy's mailbox a letter is published from A. Kolyadintsev, senior engineer of the North Caucasus Production-Distribution Administration of the USSR Ministry of Installation and Special Construction Work, under the title "A Button for the Kaftan."

CONSTRUCTION

CONSTRUCTION MANAGERS DISCUSS NEED FOR GREATER LOCAL DECISIONMAKING

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 9 Jan 81 p 2

[Discussion by Igor' Vasil'yevich Bydantsev, manager of the Uralmashstroy Trust, and Vasilii Kirillovich Kostyrya, manager of the Uralmetallurgmontazh Trust: "The Construction Site in the System of New Indicators"]

[Text] The draft document "Basic Directions" devotes a great deal of attention to the problems and challenges of capital construction. Everything involved with improving capital construction becomes that much more important today because of the large-scale transition to the new system of planning capital construction, as envisioned by the well-known decree of the CPSU Central Committee and USSR Council of Ministers on improving the economic mechanism, begins this year.

How do the construction and installation workers themselves assess their readiness for work under the new conditions and the readiness of their partners? This is the subject of the discussion below, between two trust managers: Igor' Vasil'yevich Bydantsev of Uralmashstroy [Uralmach Construction Trust], and Vasilii Kirillovich Kostyrya of Uralmetallurgmontazh [Ural Metallurgical Installation Trust].

[I. Bydantsev] The five-year experiment of the Belorussian construction workers demonstrated convincingly that even with all the imperfections of experimental introduction the transition to planning commodity construction output makes it possible to solve two basic problems: to accelerate the introduction of new capacities and reduce the volume of incomplete construction work, in other words, to solve precisely those problems which are particularly emphasized in the draft document "Basic Directions."

Now, relying on the experience of the Belorussians, all the country's contracting organizations are supposed to switch to the new system of indicators. Are we ready for this? If we are talking about our trust or our administration, the answer is yes. A great deal has been done in the 18 months since the decree was published. We have strengthened the service that provides engineering

preparation for production and reoriented the trust's automated control system to commodity output. Beginning in February of last year, we organized intensive methodological training in all administrative elements, including the brigade leaders of large comprehensive brigades, and we have carefully studied both the decree itself and the methodological materials that our main administration has. As an experiment we recalculated the 1980 plan of SU-23 [Construction Administration No 23] with the new requirements to get a standard for using planning by net output. SU-23 was deliberately chosen as a frequent winner of socialist competition within the USSR Ministry of Heavy and Transport Machine Building.

[V. Kostyrya] We have carried out similar preparations, taking account of the specific characteristics of an installation trust. But this is just theory, and the practice is lagging behind at present. The recent session of the USSR Supreme Soviet ratified the State Plan for the current year, but we still do not have a clear picture for many projects. The documents continue to be late, even though the time for submission has now been moved from September to July, and equipment delivery times have not been set. But here the 1981 plan is already based on commodity output, that is, the introduction of capacities, and not incorporation of volume!

[I. Bydantsev] Indeed, we get the impression that the customers, not all of course, but many, are simply not ready to switch to the new system of planning and accounts in capital construction. At Uralmashstroy, for example, at the end of November we were still lacking technical documentation for about one-third of the annual assignment. Even the Uralmash [Ural Machinery] Plant did not supply all the necessary documents! If our clients continue to follow such a policy, construction workers take the risk of running aground on the shoals of financing. That is why I think that the text of the "Basic Directions" should include a point on strict compliance with delivery times established by directive or contract for technical documentation, materials, and equipment.

Incidentally, financial shoals also sometimes threaten us when we have done everything that we could. We tried to "adapt" the new procedure of planning and accounting to current practices, and the resulting picture put us on guard. I am not even talking about the fact that most projects are introduced at the end of the year; this is bad and disrupts our rhythm. But suppose that we have done our job well and are finished. Whether we will receive our charges is a different matter. Here is a specific case. In the first half of the year we completed and turned over a facility at the Sverdlovsk Plastics Plant. The worker commission signed the acceptance document. That was it! Our job was done! But we do not have the right to receive the money from the client until ratification of the document by the state commission, which means after the first product is produced. But the client has no raw material. And so, instead of accelerating the time of introduction, which was the goal of our collective, we ended up with a larger volume of incomplete construction. And we are paying the bank a higher interest rate for the credit.

[V. Kostyrya] That is a fairly typical example. The same thing happened to us with a sulfuric acid facility at the Elektrokhimprom [Electrochemical Industry] Association in Chirchik. We completed installation of the equipment there back

in 1979, in full conformity with the plan. But they did not produce any output at the plant until August of last year, and the plant still has not settled accounts with us today. So we end up being blamed although we are without fault, and we lost all the benefits of introducing capacities on time or ahead of schedule.

Here is what I see as the answer to the problem. Either we should remove the condition of receiving product at the capacity that has been turned over from the concept of commodity construction output and require that installation and construction workers carry out the plan exactly, or we should impose the duty of adjusting the equipment and receiving the first product on us, the installation workers. To give ourselves some kind of insurance against violations of the schedule, we were simply forced to set up our own installation and adjustment administration within the trust. Now when we see that a client is obviously not prepared, we do the adjustment ourselves. Of course, this is not the best alternative.

[I. Bydantsev] The point, you see, is in the unequal responsibility for the final results, introduction.

I believe that the responsibility of the contracting organizations has been quite clearly defined today; if the schedule of introduction is violated we suffer large material losses. The payment for bank credit rises sharply and funds for material stimulation and development are reduced. But what about the client and the planning institute? In the same situation they suffer practically no material setback. Theoretically, we have the right to refuse to accept in the plan projects for which documents are not provided on time. But that is only theoretically.

The new mechanism for management of capital construction is based on the stable five-year plan. But this stability must be preserved at all levels and in all stages. This means both material and administrative accountability in each phase and for each participant in the creation of the particular facility should be equal.

[V. Kostyrya] I think that we need interest in addition to accountability. At the present time only the contracting organizations have real incentive. To the client and the planner the bonus for introduction on time or ahead of schedule is just a pleasant supplement to the basic incentive fund which is formed through its own production activity. But I think that the introduction of capacities should be an indicator which has the most significant impact on the amount of our partners' stimulation funds. If this relationship were put into law, it would stiffen the accountability for violating the assignments established by the state plan for introduction of capacities and give a greater incentive to observe all contract conditions.

It seems to me that this is something for the employees of USSR Gosplan, Gosstroy, and Srobybank to think about.

[I. Bydantsev] There is one more important question. As of 1 January of this year a decree of the USSR Gosstroy instituted correction factors to estimated

norms and norms of overhead expenditures to compensate contracting organizations for additional expenditures related to specific features of reconstruction work. With specialists from Uralmash we calculated the expenditures which we face in the new year based on the concrete working conditions at the reconstruction projects. No matter what we tried, our sectorial coefficient (factor) did not reflect actual expenditures. This means that the monetary supplement which we will receive will not compensate for expenditures. Our colleagues from Pervoural'sk, and they are dealing with metallurgical facilities, reported that gap is even greater for them, almost three-fold.

But why not make these coefficients like brackets and give the contractor, together with the client and planning organization, the right to adjust the coefficient within these limits? The client has no interest in overpayment and will argue for the lowest possible cost. But he does have an interest in the actual reconstruction; it is profitable to him even when the expenditures of the contracting organization are fully reimbursed and it is insured a normal profit. Even in this case reconstruction is cheaper than new construction.

The system of credits should also be more flexible. The Rules of Contracts today impose material accountability for failure to turn over a project on time entirely on the contractor regardless of the specific cause of the failure. It would appear that the time has come to amend these rules and provide for client accountability in them. If the failure to introduce on time was the client's fault, let the client pay the costs of the overdue loan.

[V. Kostyrya] I would like to add one thing here. Stroybank is an equal and equally responsible participant in capital construction. This means that it should not only use its monitoring rights in relation to contractors, but also be accountable for their actions. I could give dozens of examples where bank employees have put us in a difficult position. They have confirmed, for example, that the client had documents for 5 million rubles worth of construction and installation work, ignoring the fact that the documents were incomplete. Then we had trouble finding 2-3 million which could be incorporated based on our work technology. It seems to me that the bank itself should either study the documents carefully or trust the contractor to do this and base its decision on the contractor's opinion.

[I. Bydantsev] Everyone should answer for himself. In this respect I have one more suggestion. It seems to me that it is plainly necessary to straighten things out organizationally. For example, the leading installation organization should be named main subcontractor so that this organization can assume the functions of coordinator for installation and special work.

[V. Kostyrya] Sure, that is a good idea. In fact, that kind of organization would be most appropriate to one of the important principles stated at the October 1980 Plenum of the CPSU Central Committee. Comrade Leonid Il'ich Brezhnev said, "In order for the economy to function normally, everything possible must be done to develop the initiative of local areas, labor collectives, and economic managers. We must see that the bulk of operational questions are decided at that point where they can be decided quickly, without too much red tape." Of course, this idea was also reflected in the draft document "Basic Directions." We do

indeed need a more flexible management system under which managers in the local areas will assume full responsibility for deciding operational questions.

[I. Rydantsev] And all this must be done without delay, so that we do not, as the plenum emphasized, "drag obsolete structures into the new five-year plan."

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BUILDING MATERIALS

TURKMEN SCIENTISTS DEVELOP LIGHT CONCRETES, INTRODUCTION GOING SLOWLY

Ashkhabad **TURKMENSKAYA ISKRA** in Russian 7 Apr 81 p 2

[Article by Yu. Dashkurin, deputy chairman of the Turkmen Republic Board of Directors of the Scientific-Technical Society of the Construction Industry: "The Subject of Light Concrete Again"]

[Text] The document "Basic Directions of Economic and Social Development of the USSR for 1981-1985 and the Period Until 1990" envisions broad introduction of light concrete in construction. Specifically, the production of autoclave cellular concrete is to be increased by 90 percent, in other words almost doubled.

This is by no means accidental. Increasing the efficiency of capital construction work, conserving material and energy resources, and improving the quality and comfort of buildings and structures are significantly linked to the use of light concrete construction elements. It is common knowledge that plans in our country envision spending 700 billion rubles for various construction projects. The cost of building materials accounts for more than half of this amount. That is why it is so important to make these materials inexpensive and economical and to use them efficiently at the construction site.

Our republic has also established a program for the 11th Five-Year Plan: incorporate 6 billion rubles for all types of capital construction. Successful performance of this task will depend largely on the contribution of the scientific-technical societies, scientists, engineers, and technologists and on how widely and usefully their proposals and recommendations are implemented.

Many progressive and profitable innovations have been made in the construction industry recently. Among the authors of them are M. Babayev, T. Dovnat, K. Choshchshchiyev, Ya. Gasanov, and many others who are members of the Scientific-Technical Society of the Construction Industry and research associates at the Scientific Research Institute of Earthquakeproof Construction of the Turkmen SSR State Committee for Construction Affairs. Unrolled roofing for covering buildings and structures, finishing slabs made of polymer concrete, light concrete based on argillite aggregate, and cellular concretes are just a few of the things developed by the collective of the institute which can be produced and sent to construction projects in the republic today, without any delay.

Experimental items from the institute, in particular slabs of synthetic polymer concrete and decorative-acoustic slabs of cellular concrete, were displayed at an international exhibition in Turkey where they received high praise. Last year articles made of artificial marble and cellular concrete were presented at an exhibition in Baghdad.

The reason that Eastern countries are interested in these products is mainly their strength, lightness (which is especially important in seismic regions), and inexpensiveness. The simple technology for manufacturing them has also been acknowledged. This technology, worked out in cooperation with the Moscow Construction Engineering Institute imeni V. V. Kuybyshev, differs from the earlier method of production. The story of the search for this solution is quite interesting.

Quartz sand, of which the republic has very limited resources, was formerly used to produce autoclave-hardened cellular concrete. But 80 percent of Turkmenistan is covered by the Karakumy desert, a true sea of sand. "Why not use ordinary sand instead of quartz sand?" scientists asked and the answer was, "It can be done."

After numerous studies and tests, failures, and grief, the Turkmen and Moscow scientists were successful. The articles they made from coarsely sorted compositions of barkhan sands had good acoustic, insulation, and decorative qualities. In addition, they are economical, easy to make, and have an inexhaustible supply of inexpensive raw material.

The cellular concretes successfully passed tests at the experimental plant of the All-Union Scientific Research Institute of Construction imeni P. P. Budnikov. Instructions on the technology for making articles from cellular concrete based on barkhan sand were developed. Two State Standards for interior decorating slabs and wall units were published, as were articles and surveys.

This completed the first phase of scientific development. It was necessary to move immediately to production testing and industrial incorporation of the products. Urgency was added by the fact that the times demanded a switch from heavy to light concrete. In October of last year, at the initiative of the USSR Academy of Sciences, the USSR Academy of Medical Sciences, and the Institute of Physiology imeni I. P. Pavlov, a seminar was held in Ashkhabad with participation by specialists from 38 cities and 77 scientific research institutions, ministries, and departments. The subject of the seminar was human adaptation to hot climatic conditions. The discussion of ways to make it easier for humans to work in high temperatures was continued at the scientific-technical conference of the Scientific-Technical Society of the Construction Industry. Scientists established that the overheating of buildings in the summer (and in the spring and fall in many Central Asian republics) is caused by and worsened by the use of heavy concrete construction elements in civil and industrial construction. High heat conductivity is one of the negative qualities of such concrete.

But the use of articles made of cellular concrete, including the concretes proposed by research associates at the Scientific Research Institute of Earthquake-proof construction, makes it possible to reduce the heat conductivity of buildings.

The autoclave technology has other advantages too. It reduces material expenditures. For example, the use of inert materials is cut 30-40 percent in comparison with conventional technology. The savings of cement for each cubic meter of light concrete is 200-300 kilograms. A significant amount of electricity and fuel is conserved in pulverizing the sand and working the large slabs.

All of these facts have been confirmed by the experience of domestic industrial and rural construction and by development of the construction industry. The Soviet Union has a large number of operating plants and shops that produce articles made of light concretes. In the last 16 years their production has increased 12 times. In the Estonian SSR 1,400 buildings for cattle, hogs, and poultry have been built from cellular concrete; in Kazakhstan they have built 400 such structures.

Autoclave technology is progressing in our country. Introduction of the innovations proposed by the Turkmen institute has been included in the future plan of economic and social development of the Turkmen SSR for 1980-1990. The Turkmen SSR Ministry of Trade was the pioneer in the republic for using the progressive finishing and wall materials. The building materials combine of this ministry has launched a shop to produce decorative slabs of polymer concrete. A second shop is under construction which will produce decorative acoustic slabs and wall units made of cellular concrete based on barhan sand. These items will also be used, and to some extent are already being used, in the construction of trade and public catering enterprises.

All this is gratifying, of course. But the innovation deserves broader dissemination in all sectors of capital construction, especially in the countryside, in the land development zone, along the Karakumy Canal imeni V. I. Lenin, and elsewhere. But the Turkmen SSR Ministry of Building Materials Industry, which is expected to supply republic construction sites with modern, efficient materials, and has available fairly respectable scientific developments, has done nothing beyond planning, and that is for the remote future. In the 11th Five-Year Plan the Ashkhabad combine will rebuild the silicate brick shop and set up production of large wall units and decorative acoustic slabs. Later, beyond the current five-year plan, a plant to produce cellular concrete is to be built in Tashauz. But we would like to see the plans implemented as soon as possible. Unfortunately, the gap in time between proposals by the institute and their introduction at enterprises of the building materials industry and construction industry is not decreasing, it is increasing.

It is also possible to criticize the republic ministries of Construction and Rural Construction and the Main Administration of Construction in the Karakumy Zone. Year after year they fail to carry out plans for the introduction of new technology. There are several reasons for this, not only the lack of attention by economic managers and inadequate material incentive for labor collectives to incorporate new forms of output, but also flaws in the plans themselves and poor coordination of the development of allied sectors.

These problems are by no means new; Turkmen SSR Gosstroy, Turkmen SSR Gosplan, and the USSR and republic ministries and departments must find basic solutions. Only then will the path from the laboratory to production be shortened for innovations. Only then will the task of increasing the efficiency of capital construction in the republic be accomplished through the combined efforts of researchers, plant workers, and construction workers.

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BUILDING MATERIALS

BRIEFS

NEW LIGHT CONCRETE—Yaroslavl'—The Yaroslavl' Reinforced Concrete Construction Element Combine has initiated mass production of surface and ceiling panels made of shungisite concrete. The weight of the pieces is 25-30 percent less than panels made of heavy concrete and they use less steel. This combine has also begun production of shungisite concrete outside wall panels for industrial and public buildings. Their use makes it possible to cut the expenditure of cement by 15 percent and reduce labor expenditures. Construction elements made of economical light concretes in Yaroslavl' are now on exhibit in the Building Materials pavilion at the Exhibition of the Achievements of the USSR National Economy, where a major intersectorial exhibit has been opened. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Feb 81 p 2] 11176

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